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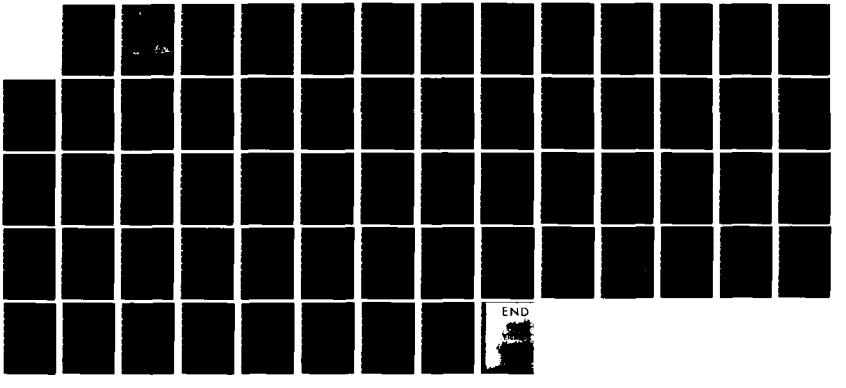

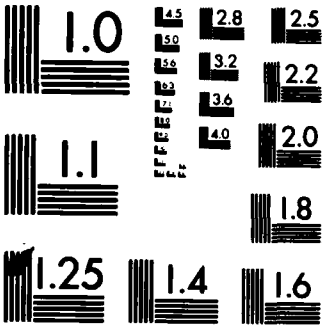

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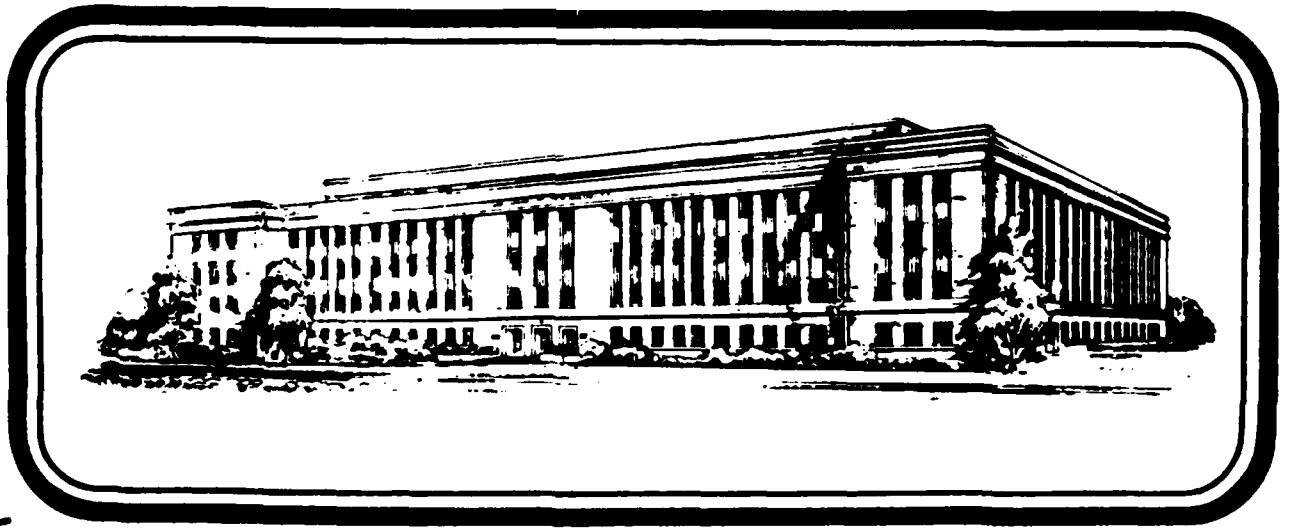
"—AND TWO IF BY SEA." REESTABLISHING A TROOPSHIP CAPABILITY



INDUSTRIAL COLLEGE OF THE ARMED FORCES

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This study examines the current and future ability of the United States to transport troops by sealift. Potential limitations on airlift, the first leg of strategic trooplift, combined with missions which uniquely require troopship mandate that a seaborne trooplift capability be available. The present absence of active troopships requires that some means of restoring the second leg of strategic mobility, sealift, be developed.

The present lack of troopships has both historical precedent and is a result of

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20. reliance on airlift to deploy troops. In order to insure the ability to respond to all possible contingencies and to insure that the deployment rates in a general war can be met, restoration of a troopship capability is required. There are resources in being, which through effective planning and with minimal funding could provide an adequate troopship capability.

The study recommends that the planning cycle which has led to the loss of the seabore trooplift option be revised. A specific requirement must be developed. Programs which will lead to a rapid improvement in ship availability and will facilitate mobilization are described. Finally, regularly exercising the troopship capability is recommended.

THE INDUSTRIAL COLLEGE OF THE ARMED FORCES

NATIONAL DEFENSE UNIVERSITY

MOBILIZATION STUDIES PROGRAM REPORT

". . .and two if by sea. . . ."

REESTABLISHING AN AMERICAN-TROOPSHIP CAPABILITY

by

John R. Clickener, LTC, USMC

A RESEARCH PAPER SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE RESEARCH
REQUIREMENT

RESEARCH SUPERVISOR: CAPTAIN WILLIAM E. LINDSAY, USN

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MARCH 1983

DISCLAIMER-ABSTAINER

This research report represent the views of the authors and does not necessarily reflect the official opinion of The Industrial College of the Armed Forces, the National Defense University, or the Department of Defense.

ABSTRACT OF STUDENT RESEARCH REPORT
INDUSTRIAL COLLEGE OF THE ARMED FORCES

NAME OF RESEARCHER (S)	TITLE OF REPORT
Clickener, John R. Lieutenant Colonel, USMC	". . .and two if by sea. . . ." Reestablishing An American Troopship Capability
SECURITY CLASSIFICATION OF REPORT Unclassified	REPORT NUMBER M IRP #26

ABSTRACT

Problem Statement: This study examines the current and future ability of the United States to transport troops by sealift. Potential limitations on airlift, the first leg of strategic trooplift, combined with missions which uniquely require troopship mandate that a seaborne trooplift capability be available. The present absence of active troopships requires that some means of restoring the second leg of strategic mobility, sealift, be developed.

Conclusions: The present lack of troopships has both historical precedent and is a result of reliance on airlift to deploy troops. In order to insure the ability to respond to all possible contingencies and to insure that the deployment rates in a general war can be met, restoration of a troopship capability is required. There are resources in being, which through effective planning and with minimal funding could provide an adequate troopship capability.

Recommendations: The study recommends that the planning cycle which has led to the loss of the seaborne trooplift option be revised. A specific requirement must be developed. Programs which will lead to a rapid improvement in ship availability and will facilitate mobilization are described. Finally, regularly exercising the troopship capability is recommended.

THIS ABSTRACT IS UNCLASSIFIED

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EXECUTIVE SUMMARY

This study analyzes the current condition of the United States capability to deploy troops by sea. Although the principal method of deploying troops is by airlift, there are some circumstances which favor using sealift. There is also a finite through-put for airlift to a given theater, sealift would be able to supplement that delivery rate for troops. This is particularly important because there is considerable concern that the airlift of troops will be inadequate in the event of a general war.

A brief review of the pattern of troopship planning establishes that it is an issue that has been essentially ignored except during an actual conflict. The recent resurgence of interest in restoring the capability to deploy troops by sea is a major step in mobilization preparedness, one that has not been taken before.

The study inventories the potential source of ships that could serve as troopships. In determining the final numbers the criteria of assured availability, i,e., firm United States control, adequate performance, sufficient capability, and response time were considered to be crucial. Foreign-flagged ships, while possibly available under certain conditions could not be guaranteed for employment. Since covergence of planning and eventual commitment was deemed to be mandatory, the foreign ships were eliminated from consideration as part of an American troopship capability.

Factors which influence the ability to provide troopships are described. Costs were determined to attain the maximum trooplift from the available ships. No attempt is made to designate specific ships or numbers of ships since these will be determined by the actual requirements which emerge from the planning process.

The study concludes that the United States does not have the ability to transport, as opposed to an amphibious assault, a large militarily significant force by ship. Recommendations to systematically reestablish a troopship capability are realistic and affordable.

CHAPTER I

INTRODUCTION

". . .and two if by sea. . . ." This famous line dramatically points out that sealift, and most specifically the movement of troops by sea, was a strategic advantage. Although we have historically deployed our forces by sea, have we really recognized the strategic role of troop sealift? Do we presently have the capability to deploy large forces by sea? Has technological change and alternatives eliminated the need for United States vessels to transport troops? The purpose of this research paper is to answer these question and to examine alternatives which will enable the Nation to project its military power by sea.

In a general response to the foregoing questions, it's fair to state now, and it will be discussed later, that we have allowed our troop sealift to atrophy while becoming almost totally dependent upon the airlift of troops. There is a substantial troop airlift capability in the 234 C-141B's of the Military Airlift Command (MAC). The Civil Reserve Air Fleet (CRAF) can be activated to increase the troop airlift capacity of MAC by some 125 passenger aircraft; however, this is pre-conditioned on a declaration of war to active CRAF Stage III. Without that declaration, i.e., mobilization in advance of hostilities, the CRAF would contribute only 20 passenger aircraft. As late as 1978 the Chairman of the Joint Chiefs of Staff (JCS) stated that ". . .aircraft allocated to CRAF are sufficient to move all personnel anywhere our national strategy requires."[1] However, more recent analysis has questioned the

absoluteness of that statement.[2,3] The recent war in the Falkland Islands demonstrated that a traditional troop sealift capability is critical in conflicts which occur at great distances and when airfields are unavailable. Subsequent to the British victory the JCS initiated a review of troopship requirements to augment airlift and to complement amphibious lift.[4,5,6] Pending completion of that study and any subsequent policy guidance we've placed all of our eggs in one basket.

This paper relies upon unclassified sources and avoids the use of specific scenarios. It accepts prima facie that a troopship capability would make at least some contribution to our overall deployment and employment planning. This is reasonable, based upon a realistic assessment of actual troop airlift capability and the possibility of contingencies which do not favor or permit the use of extensive airlift. It is also supported by no less than the Admiral of the Fleet of the Soviet Union, Sergei G. Gorshkov, who has actively expanded the Russian passenger ship fleet and who has pointed out the potential troop transport capability of the United States.[7]

The use of high speed air-cushion ships and nuclear vessels by the 1990's, which were once envisioned, is unlikely,[8] therefore, this paper will examine only those alternatives which can be implemented now and which will remain available into the 1990's. Finally, no attempt is made to determine "how much" for that is directly related to specific plans. The focus is on realistic methods of establishing various levels of capability.

FOOTNOTES

CHAPTER I (Pages 1 - 2)

[1]Association of the United States Army, Strategic Mobility: Can We get There From Here-In Time? (Arlington, Va.: 1978), p. 6.

[2]Ibid., p. 21.

[3]Council of American-Flag Ship Operators, The U.S. Merchant Marine and Our National Security (Washington: Undated), p. 5.

[4]Interview with CAPT John E. Ekstrom (USN), Director, Strategic Mobility Operations Division, J-4, Joint Chiefs of Staff, Washington: 25 January 1983.

[5]Interviews with CDR W. P. Thomas (USN), Military Sealift Command, Washington: 20 October 1982 and 26 January 1983.

[6]Telephone conversation with LCDR D. G. Thomas (USN), Sealift Officer, Central Command Liaison Office, Washington: 25 January 1983.

[7]Robert E. McKeown, Capt (USAR), "Their Merchant Fleet," U.S. Naval Institute Proceedings, October 1982, pp. 160-167.

[8]Center for Naval Analysis, The Cost of Merchant Ship Availability, CNA 347-73 (Arlington, Va.: 1973), pp. III-2, 3.

CHAPTER II

BACKGROUND

The Development of Seaborne Trooplift

The Spanish-American War marks the United States first attempt to deploy a large force by sea. It also graphically demonstrates the dangers of inadequate planning, insufficient ships, and the wrong types of ships. On 14 June 1898, after over two months of preparation, a force of 17,000 sailed to engage a force of 35,000 in Santiago, Cuba. Due to insufficient shipping, 10,000 men and most of the artillery were left behind.[1]

World War I found the United States still unprepared to deploy troops. Government-owned ships did not exist in sufficient numbers and the merchant marine was small. Extensive use was made of foreign ships through purchases at exceptionally high prices. The government also used angary, or siezure of neutral vessels, and commandeered American ships to supplement the United States fleet. Finally, an emergency construction program was begun. This final measure was too little, too late, for the war ended before many of the ships were completed. Although the United States possessed a large modern fleet of merchant ships after the war, a wave of isolation swept the country. Many of these ships were sold, scrapped, or laid-up in backwaters.[2] The lessons of Cuba and World War I were forgotten.

The entry of the United States into World War II resulted in another massive building program. Over 300 passenger-type vessels and transports were built, but most of them were not available until late in or after the war

ended. To compensate for the lack of troop ships, passenger liners were chartered from Great Britain.[3] In addition to traditional passenger-type ships, a new group of vessels especially designed for amphibious assaults were constructed. These amphibious ships were designed to transport units (both troops and their equipment) and to facilitate landing them over hostile beaches.

At the end of the war the United States had a massive trooplift capability consisting of troopships, amphibious ships and merchant marine (civilian) passenger ships. Much of the military capability was retained in either active or reserve status rather than being sold as had been done after World War I. The conflict in Korea began while much of the capacity was still available in active service or in the National Defense Reserve Fleet (NDRF). Trooplift was vital, not only in deploying forces to the theater, but in the December 1950 evacuation of 105,000 troops and 91,000 civilians from Hungnam, North Korea and the successful amphibious landing at Inchon.[4] Of note was the difficulty encountered in finding crews for all of the ships that were activated from the NDRF. Clearly activation of reserve vessels did not permit a rapid response. Unfortunately, the lessons concerning the strategic role of troop sealift learned during three wars and this conflict were again generally forgotten as is shown in the following section.

The Decline of Seaborne Trooplift

Although the reduction in seaborne trooplift slowed during Korea, a rapid reduction began in the 1960's. The retirement and sale of troopships was an

outgrowth of the emergence of airlift. The decision to use air transportation for troops by the Secretary of Defense[5] stimulated the reduction, but also considered the need for a balance. This balance was to be provided by passenger liners which during that period numbered 13 and possessed a combined commercial capacity of 9.300 passengers or maritime loading of greater than 52,000[6] troops. This policy bore fruit when during the Cuban Missile Crisis passenger ships were placed on standby by the Department of Defense.

Figure 1 depicits the reduction of military ships. The last major exercise involving the use of troopships was during November 1964 during Operation Steel Pike in Spain.[7] Significant in this operation were the highly successful use of MSC chartered civilian vessels and the extensive use of newer amphibious ships. The improved amphibious ships contributed to the retirement of additional ships and to the reduction of ships retained in the NDRF.

The desired balance between troop airlift and sealift was undone by the economics of the worldwide maritime industry. The higher crew costs, more stringent operational regulations, and lack of extensive subsidies placed United States passenger liners at a disadvantage. Of greater consequence was the enormous growth of air travel. The speed and low cost of travel ultimately destroyed the United States flag passenger fleet. By 1971 only four of the thirteen U.S. flag ships were carrying passengers. The others were laid up or sold. At present there are only two small vessels operating in the cruise trade.

The very small remaining element of balance has also diminished as the

FIGURE 1

ACTIVE MILITARY TROOPSHIPS

Type Ship	Year						
	1950	1957	1964	1970	1972	1977	1980
APA*	104	70	24	10	3	2	0
LPA							
TAP 49	49	39	16	11	3	0	0

* Redesignated as LPA's 1 Jan 1969

Source: Jane's Fighting Ships

size of the amphibious force has been reduced. Although new, vastly more capable ships have been added, the total lift capability is now sufficient to lift the assault echelon at only one Marine Amphibious Force (MAF), using all the active amphibious ships. Alternately, there is the ability to simultaneously lift the assault echelon at one Marine Amphibious Brigade (MAB) in both the Atlantic and the Pacific.[8] This capacity is, and will remain into the 1990's, short of the objective of lifting the assault echelons of a MAF and a MAB. Nor does the amphibious lift provide for movement of the remaining troops which comprise the assault follow-on echelon.

The balance desired by former Secretary of Defense McNamara is gone. In response to the earlier question, the United States no longer has the capability of moving a larger number of troops on relatively short notice except by air. While a return to the charters and seizures of the past could provide troop sealift, perhaps sealift is no longer essential. The next section examines the reasons for sealifting troops in the "jet age."

Reasons to Sealift Troops

Although the speed of airlifting troops, absent any other constraints, cannot be disputed, there are sound reasons to doubt that there is sufficient total capacity to meet the demand of either a general war or a multiple theater conflict. There are also sufficient causes to question the availability of passenger ships from other nations to support the deployment of American Forces. Finally, some circumstances limit the suitability or even capability of deploying troops by airlift. An examination of seven general

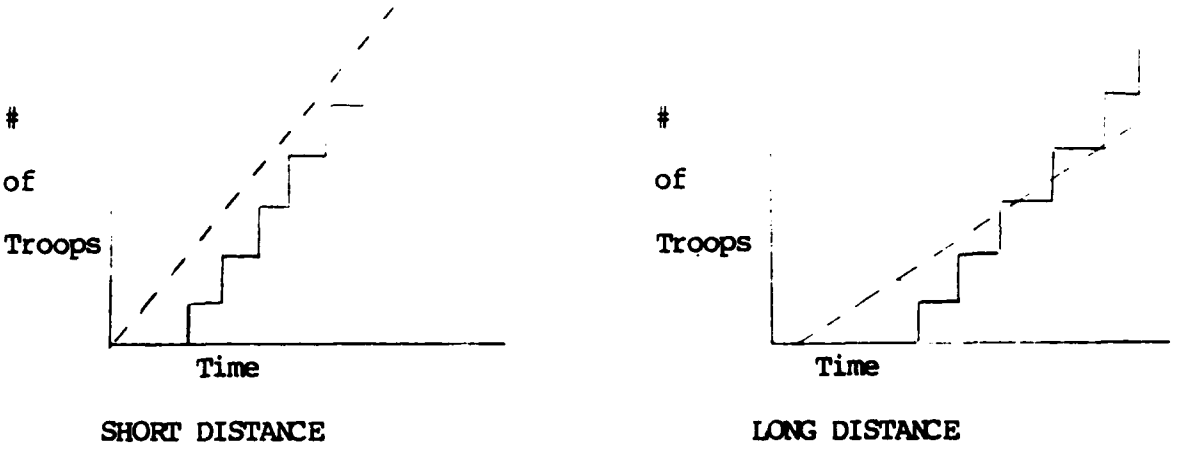
issues will provide an answer to the question concerning the technological obsolescence of troop movement by sealift.

A NATO war or, in the best case, mobilization prior to the commencement of combat would lead to the immediate deployment of Army forces to marry-up with their equipment, Air Force units with their equipment, and critical supplies. This, according to General William C. Moore, USAF (Ret), a former commander at MAC, will demand a surge to four times the regular C-141 flying hour rate. There is considerable concern that the total required trooplift volume alone would exceed the combined capacity of MAC augmented by Stage II CRAF.[9,10] One solution to this dilemma would be to deploy follow-on units by sea. These units would arrive at the same time and in the same port as their sealifted equipment. This would reduce the excessive demand on airlift, the congestion at arrival airfields, and the inland transportation required to join the units with their equipment prior to employment.

The doubt of sufficiency worsens when alternate theaters are examined. Instead of about 3,500 nautical miles from the east coast to Europe it is more than 5,500 nautical miles to the Middle East and there are considerably fewer prepositioned supplies and equipment available. From the west coast to Korea the distance is nearly 5,000 nautical miles. These longer distances will slow the build-up of forces. Seaborne trooplift is no faster in the earliest stages, but a point of equalization is eventually reached because of the numbers aboard each ship.[11] Table 2 depicts a notional demonstration of this build-up.

FIGURE 2

NOTIONAL TROOP DELIVERY ARRIVALS ASSUMING EXISTENCE OF SEALIFT



Sealift _____

Airlift - - - - - - - - - -

In any conflict airfield saturation, or filling of all available ramp space, will limit the rate at which forces can be delivered. Similarly, any damage or interdiction of the arrival airfields would greatly slow the arrival rates. For example, the "friendly" airfield in Beirut was unavailable in 1976. The U.S. nationals were evacuated by sea. Fuel availability at the airfields also constrains the throughput. Both combat aircraft and transporters will of necessity compete for available supplies. This may necessitate further constraints on arrivals and may also require the dedication of scarce airborne refueling assets to sustain operations. The use of troop ships reduces airfield congestion, competition for limited fuel supplies, and with sufficient lighterage does not require extensive port facilities.

Intermediate basing and overflight rights may be denied to airlift. This would not only lengthen air routes, but would require extensive aerial refueling. Because commercial aircraft lack this feature most of CRAF would be eliminated unless intermediate refueling bases are available. The total deployment would have to be accomplished by 234 C-141's in MAC and the few long range commercial aircraft. Sealanes are not generally dependent upon approval of Third Nations. Again, slowness of delivery delays a response, but airlift would be freed for the airlift of critical supplies and replacements.

Air supremacy is essential to sustain a continued airlift. The threat to the airlifter ranges from the airbattle to that of the shoulder-launched missile in the hands of an insurgent. The loss of troops would reduce the forces available for the land battle, but the loss of airlift would gravely

impair or preclude the delivery of vital supplies and replacements. Ships are not immune to interdiction by surface vessels, submarines, aircraft or missiles. However, since the bulk of the fuel, ammunition, equipment for follow-on units and most resupply will be sealifted the same naval forces protecting the cargo ships could protect troopships. In any conflict short of a war against Russia, the submarine threat is essentially non-existent, therefore, the likelihood of arrival is almost assured.

Additional benefits of sealifting troops include flexibility, preservation of unit integrity and the ability to project power through military presence without actual commitment. A seaborne movement can be rerouted or halted while in transit since arrival is an "event." An air movement is a "process" which, once the first element arrives, is very difficult to direct or stop without destroying unit integrity and possibly endangering the initial forces. Similarly, the airborne trooplift must land in theater or in a third country, it can't remain in transit for extended periods. The necessity of actually positioning airlifted forces heightens the threshhold of potential conflict far above that of a force afloat in neutral water, but just over the horizon.

There are two functions, in addition to the strategic movement of forces, that could be performed by troopships. The evacuation of civilians, paticularly in NATO would greatly exceed the capacity of returning airlift. A related task would be limited care medical evacuation (LCME), or the return to CONUS of those non-critical casualities whose convalescence exceeds the in-theater retention policy. Passenger carrying vessels, or troopships, offer the only realistic means of augmenting the capacity of airlift.

Because of the seven general issues described above, there could be a tendency to rely upon allied vessels. As will be discussed in the next section, there are significant passenger ship assets under foreign flags and flags of convenience to meet our needs. Unfortunately, the availability of these ships, particularly in a non-NATO war is uncertain. The recent history of conflict in the Middle East demonstrated that foreign vessels and U.S.-owned foreign flag vessels were not readily available.[12,13] Finally, the availability due to schedules, speed, and foreign crewing makes reliance upon non-U.S. troopships uncertain at best.

Finally, there is always the possibility of a contingency in which there is no way to deploy troops by air, such as the British encountered in the Falkland Islands. No one envisions such a crisis, but then neither did the British. In fact there have been five other islands, island groups or parts of islands seized by force since 1970.[14] The response of the British Merchant Marine and the rapid conversion of passenger ships into troopships was possible only because the ships were active British-flag vessels. The United States could not immediately respond to such a contingency with any forces greater than those carried aboard the current amphibious force.

While this list of reasons to attain and sustain a troop sealift is not all inclusive, it does clearly establish that there is a need for a means to augment and supplement our troop airlift capability. The following section examines the existing resources from which we would be able to obtain troopships.

FOOTNOTES

CHAPTER II (Pages 4 - 13)

[1]George C. Reinhardt and William R. Kintner, The Hazard Years: How America Has Gone to War (Garden City, N.Y.: Doubleday, 1960), p. 36.

[2]Committee of American Steamship Lines, The American Merchant Marine, Hero in War-Stepchild in Peace (Washington: May 1966), p. 4.

[3]Committee of American Steamship Lines, Passenger Ships: A Continuing Element of United States Policy (Washington: July 1965), p. 14.

[4]Committee of American Steamship Lines, The American Merchant Marine, Hero in War-Stepchild in Peace, p. 27.

[5]Committee of American Steamship Lines, Passenger Ships: A Continuing Element of United States Policy, p. 13.

[6]Ibid., pp. 26-27. The stated troop capacity was developed using loading factors from 4 to 7, depending upon the specific ship.

[7]U.S. Congress, House, Committee on Merchant Marine and Fisheries, Operation Steel Pike I, Hearing (Washington: U.S. Government Printing Office, 1965), p. 30.

[8]"Outlook is Good for a Healthier Amphibious Lift," Marine Corps Gazette, February 1983, p. 10.

[9]Association of the United States Army, Strategic Mobility: Can We Get There From Here-In Time?, p. 6.

[10]National Security and Industrial Association and National Defense Transportation Association, Record of Proceedings of the Conference on National Strategic Mobility - May 1982 (Washington: 1982), p. 80-81.

[11]Allen V. Bres, Department of Defense Requirements and Capability of Marine Lift (Washington: U.S. Department of Commerce, November 1959), p. 11.

[12]Council of American-Flag Ship Operators, The U.S. Merchant Marine and Our National Security, p. 4.

[13]Association of the United States Army, Strategic Mobility: Can We Get There From Here-In Time?, p. 21.

[14]Sir James Cable, "The Falklands Conflict," U.S. Naval Institute Proceedings, September 1982, p. 73.

CHAPTER III

PRESENT TROOPSHIP RESOURCES

This chapter examines each potential source of ships which could be used to provide a militarily significant troopship capability. The principal criteria for the tentative selection of suitable ships was based on four criteria. First, a candidate ship had to be large enough, i.e., in excess of 1,500 troops, to contribute to the movement of forces. Second, a candidate ship had to be available for planning and employment in any contingency; restrictions to NATO only or doubt as to availability because of divided flag and ownership were not acceptable. It was considered that assured DOD control was essential. Third, operating schedules that took the ships out of the U.S. for most of each year was disqualifying. Finally, the ship had to be in conditions of seaworthiness and mechanical operability which would not require complete rebuilding.

Several additional factors were considered to be highly desirable; however, the absence of such features did not disqualify ships from use as a troopship. The capability of self sustained off-load while at anchor was highly desired, particularly in conjunction with amphibious operations. Booms for cargo satisfy the capability, for troops could be departed by using landing nets over the side of the vessel. At-sea refueling was desirable, but was not essential. A speed in excess of 20 knots was preferred, but a minimum sustained speed of 16 knots was acceptable. The ability to carry limited cargo associated with embarked troops (small arms, rations, personal

equipment, etc.) would expedite the ultimate commitment of the troops upon arrival and would also preserve unit integrity.

Suitability for specific missions was not considered to be a critical criteria. As noted in Chapter II, the quantity of amphibious shipping is not expected to reach the desired levels by the mid-1990's. Because it is current policy to use commercial, or non-amphibious ships in the assault follow on echelon (AFOE) of an amphibious operation,[2] any troopship increase would increase the combat potential of the Marine Corps Air-Ground Task Force (MAGTAF). While commercial cargo ships of various types can be added to the AFOE, thereby increasing the quantity of equipment and supplies, none of those types of ships provide the means to deliver a meaningful number of troops.[3] Some of the AFOE personnel could, for a single MAF, be fitted into the assault echelon (AE) shipping spaces that result from combat landing.[4] This would not satisfy the entire requirement and would severely interrupt unit integrity. Troopships must be added to increase any MAGTAF above one MAF. The type of ship needed for this type of specific mission employment is not significantly different from that needed for general trooplift to a theater.

Active U.S. Ships

Active U.S.-flagged ships operating in the United States provide an immediate capability to move troops. Unfortunately, there are no active troop transports in either the Navy or the Navy Reserve. The only active sources for trooplift are the residual of the American passenger ship fleet and the

school ships operated by the maritime academies. This capability now without any modifications, would provide four ships with a total capacity of about 6,400 troops.

The total active passenger ship inventory is two ships, the S.S. Oceanic Independence and the S.S. Oceanic Constitution.[5] Both operate as cruise ships in Hawaii. Their specifications and potential are described in Appendix A. The increase from about 2,200 troops unmodified reaches the stated 4,379 with quick minor modification which would not impair the ship's designed purpose. Major modifications could be made to increase the capacity to about 6,500 troops. Both performance characteristics and availability meet the criteria stated above. These two ships are excellent candidates for use as troop ships.

There are four small combination vessels, the Santa Magdelena, Santa Maria, Santa Mariana, and Santa Mercedes, which are AP's converted to carry containers and cargo.[6] The troop capacity of each ship is less than 260 troops, therefore, while these ships may be of potential military sealift value, they do not contribute to troopship capabilities and are deleted from consideration.

There are five maritime academies, Maine, Massachusetts, New York, Texas and California, that operate school ships capable of carrying troops. The Texas Clipper and the Golden Bear are both pre-World War II vessels which have troop capacities of 500 or less. The Bay State was heavily damaged by an engine room fire and is beyond economic repair. It is being replaced by a ship which lacks significant troop capacity. Both the State of Maine and the

Empire State are suitable, with an immediate capacity of about 1,000 troops each. This would be increased to 3,016 each as a result of minor shipyard work. Complete specifications are in Appendix B.

These two ships are fully certified and partially manned year round. The ships each conduct a 60 training cruise each year. Alternate scheduling of cruises and restricting the cruises to United States ports would provide rapid availability. Both are excellent candidates for assignment as troopships.

Effective U.S. Controlled (EUSC) Ships

There are three effective U.S. controlled passenger ships which would, if available and refitted, provide a significant amount of trooplift (Appendix C). These vessels are over 50 percent U.S. owned, Panamanian-flagged and foreign crewed. Although subjected to emergency requisitioning by the Maritime Administration (MARAD) and technically exempt from requisitioning by the nation of registry, there is little confidence that early availability could be relied upon.[8,9] The operating schedule of these vessels away from U.S. ports serves as an additional limiting factor. A final limiting factor is the foreign crews who would probably have to be replaced.[10] Because of the significant doubt as to access to these ships, these three ships are deleted from consideration.

Inactive/Reserve U.S. Ships

The inactive passenger liners listed in Appendix D have no immediately significant potential as troopships. The two small vessels were laid up, one

in Hong Kong and one in San Francisco, without taking significant preservation measures, have not been maintained and are of doubtful use unless put through a major shipyard overhaul. Both were dropped from consideration. The S.S. United States is a much more complex situation. She was superbly preserved prior to layup and has been closely monitored. The capability to move very large numbers of troops at sustained speeds above 30 knots would be a major strategic lift enhancement. The interest in the United States as a cruise ship, a hospital ship, and most recently as a world touring "condominium" combined with disputed ownership make her a doubtful candidate. If she is returned to service, the planned usage would make her generally unavailable. Although not available without some shipyard work, the United States must still be regarded as a potential troopship in a protracted conflict, and cannot be completely dropped from consideration.

The 46 reserve troop-type ships are currently maintained by MARAD as a part of the National Defense Reserve Fleet (NDRF) in sites on the James River (37), in Beaumont, Texas (1), and in Susian Bay, California (8).[11] These vessels were stored as mobility assets for use in support of national defense. All of the suitable ships were completed during the period 1943 through 1952, giving an average age of about 35 years; however, many of the ships only operated for a short period before being laid up in a reserve status. Since these ships were specifically designed to transport troops, they should constitute the major resource for reestablishing a troop lift capability.

Thirty-six of the ships are attack transports (APA/LPA) which were designed to support amphibious operations. Their capacity is relatively small (1,526 troops) and their speed of 16.5 knots, if attained, would barely satisfy the criteria. These ships were used extensively and many of them were five years out of overhaul when they were mothballed. Preservation was very minimal and there has been no maintenance performed. They constituted doubtful assets of very limited value[12] and as a class have been decreasing in numbers through removal from the NDRF and scrapping. At best, the LPA class of ships could be available only in a protracted conflict and therefore are deleted from consideration.

The second class of ships are the AP/TAP's shown in Appendix E.[13] These 14 larger, faster (19 to 20 knot) ships are older than the LPA class; however, they were not amphibious ships and saw considerably less service. They also received minimal preservation and have not been maintained. Engineering studies that were conducted by MARAD and an independent engineering consulting firm substantiated that these ships could be returned to service following substantial shipyard work.[14] A potential problem with activation of the 7 "Admiral" class ships would be finding personnel certified in turbo-electric propulsion systems. The possible lack of qualified crew potentially eliminates half of the available total TAP class. The other 7 ships could be crewed with little difficulty, but all 14 would require some overhaul before being placed in service. Because these ships offer some potential for service, and specifically because they are design configured as troop transports, they will remain under consideration.

Large Active Foreign Passenger Ships

Appendix F lists the suitable ships which periodically call at U.S. ports at least once each year. None of these ships operate exclusively in U.S. waters; therefore, the likelihood of availability on short notice is poor. Of greater consequence is that these ships might not be made available by their parent governments. Although NATO has established a Defense Shipping Authority and a Defense Shipping Council, there is considerable reason to doubt that any foreign flag passenger ships would be available for a non-NATO conflict or that they would be made available prior to a conflict in NATO.[15,16] Under certain conditions any of these ships in U.S. ports could be seized by law[17] or simply confiscated (angary); however, short of general war, these measures are unlikely. Because these ships are essentially unavailable, they will be deleted from consideration with one exception. Negotiations are underway to bring the Pacific Princess under U.S. flag and to operate her from U.S. Ports. If this occurs, she would become an excellent candidate for use as a troopship.

Summary

As described above, the number of ships that can be used to meet current worldwide contingency or war strategic sealift of troops is quite limited. Two active passenger ships operating in Hawaii would be locally available with little leadtime. Two schoolships on the east coast would be available after limited shipyard work. One large currently inactive passenger liner might become available after shipyard overhaul. The 14 TAP class troopships would

be available after extensive shipyard overhaul. Added to the probem of limited numbers and delayed availability of most of the ships is the poor geographic positioning of most readily available assets. The next chapter will examine ways of increasing responsiveness and increasing capabilities. Clearly, two small ships in Hawaii and inactive vessels which require shipyard work do not constitute a second leg of strategic trooplift.

FOOTNOTES

CHAPTER III (Pages 15 - 22)

[1]National Security and Industrial Association and National Defense Transportation Association, Record of Proceedings at the Conference on National Strategic Mobility-May 1982, p. 87.

[2]James M. Rowsey, et al., MERAG Study-A Joint Navy-Marine Corps Study to Evaluate the Suitability of Merchant Ships to Augment Amphibious Ships (U), Office of the Chief of Naval Operations (Washington: 1977), p. 1. UNCLASSIFIED.

[3]Ibid., p. VI-2.

[4]Interview with LTC G. Henderickson (USMC), Strategic Mobility Plans Officer, Code LPJ, Headquarters USMC, Washington: 19 October 1982.

[5]Military Sealift Command, Ship Register-July 1982, MSC P504 (Washington: 1982), pp. 19, 23.

[6]Ibid., p. 31.

[7]U.S. Code, Title 46--Shipping, 1976 ed. (Washington: U.S. Government Printing Office, 1977, Sec. 1242).

[8]Marshall E. Daniel, LTC (USAF), Defense Transportation Organization-Strategic Mobility in Changing Times (Washington: National Defense University, 1979, pp. 13-14.

[9]Clinton H. Whitehurst, Jr., The Defense Transportation System (Washington: American Enterprise Institute, 1976), pp. 163-164.

[10]Ronald Robbins, Briefing Concerning the RFA and RN at Military Sealift Command, (Washington: 12 May 1982).

[11]Military Sealift Command, Ship Register-July 1982, pp. 36-50.

[12]Interviews with CDR W. P. Thomas (USN), Military Sealift Command (Washington: 20 October 1982 and 26 January 1983).

[13]The Darby has been removed from the NDRF for use as a billeting ship during the overhaul of an aircraft carrier. Her status is still essentially the same as the other TAPs.

[14]Interview with Paul A. Fries, Jr., Manager Support and Mobility, Informatin Spectrum, Inc., (Arlington, Va.: 18 February 1983).

[15]Marshall E. Daniel, LTC (USAF), Defense Transportation Organization-Strategic Mobility in Changing Times, p. 15.

[16]National Security and Industrial Association and National Defense Transportation Association, Record of Proceedings at the Conference on National Strategic Mobility-May 1982, p. 87.

[17]U.S. Code, Title 50--War and National Defense, 1976 ed. (Washington: U.S. Government Printing Office, 1977, Sec. 196).

CHAPTER IV

PROGRAMS THAT WOULD PROVIDE TROOPSHIPS THROUGH THE MID-1990'S

Chapter III described all the potential troopship resources and identified that the present immediate capability is essentially two medium size ships in Hawaii. In peacetime troopships were at an enormous cost disadvantage in relation to troop airlift. The short war ideology also played a role in the process of eliminating troopships, for the response time was slow. Finally, the scarcity of funds and personnel resulted in the deactivation of all Navy troopships. This loss of capability has not gone unnoticed and several studies have been initiated to examine ways of reestablishing a militarily significant troopship capability.

Current Studies

The decision to provide a military capability is based on requirements. This can lead to a circular process to the effect that:

1). The CINCs haven't planned to use troopships.

2). If there are no plans to use troopships, then there is no requirement.

3). If there is no requirement, there is no need to charter/ reactivate/requisition/etc. troopships.

4). If there are no troopships, the CINCs can't plan to use them as strategic assets.

A circular problem has the characteristics of being so complex that it can't readily be examined, therefore, it never gets addressed. This may have been true of troopships in the past, but it is no longer the case. There have been three recent projects which specifically recognize the troopship shortage.

The Joint Chiefs of Staff (JCS) requested information concerning troopship requirements from the CINCs and also requested service inputs in September 1982.[1] The responses all stated an interest in having a troopship capability, addressed the increased flexibility and capability that would result, but did not state specific requirements that were unsatisfied. This lack of a specific requirement derives from the need to plan for deployment using available strategic mobility assets (airlift and amphibious ships) rather than desired, but nonexistent troopships. JCS has attacked the circular problem by specifically examining various scenarios and employing various mixes of airlift and troopships. It is recognized that in some situations, such as the British encountered in the Falklands, that airlift cannot substitute for sealift. In most other cases sealift can significantly contribute to the theater troop buildup, particularly if units are prepared to deploy early. The end product of the current study may result in a specific requirement in the Defense Guidance. This statement of the requirement is the first step in reestablishing a troopship capability.

The Joint Strategic Capabilities Plan (JSCAP) requires the Military Sealift Command (MSC) to maintain a troop transport capability as a backup to airlift; however, neither the quantity to be moved, nor the time frame were specified. The NDRF satisfied the JSCAP. During the summer of 1982 MSC

initiated a detailed inventory of potential troopship assets and conducted brief inspections of the schoolships and the two passenger liners.[2]

There is a detailed scenario based study being conducted by Information Spectrum, Inc. (ISI) under contract with OP 404, Office of the Chief of Naval Operations.[3] This classified study examines the sources of ships, the potential applications in specific plans and the estimates of the CINCS of lift requirements. The limiting aspect of the study is the circular problem described earlier, the CINCs have not planned on sealift, therefore if sealift were included in unconstrained availability and the plans were redrafted, the requirement might be significantly greater than that addressed in the ISI study.

This study developed costs for upgrading and maintaining various classes of ships through subcontracting with marine engineers and marine cost estimators. These costs provide a realistic method of examining trade-offs for budgetary purposes if a requirement is stated in the Defense Guidance. Additionally, these estimates serve as measures of merit in selecting specific types of ships.

Improving Response Times and Numbers

Troopship availability is a function of status (active/inactive), condition, location and crew. There is no reasonable likelihood that non-troopships will be built or that new passenger ships will enter the U.S. flag fleet except perhaps for the Pacific Princess which was noted in Chapter III. Also, since the foreign flag ships, including EUSC, cannot be planned

upon for use in all potential contingencies. Therefore, this section will examine only the ships which could reasonably be specifically allocated to a CINC for planning and employment. The allocation for planning is crucial, for this is the only way to "break" the circular problem and to reestablish a second leg of strategic trooplift. These parameters narrow the problem and the solutions to the two passenger ships (Appendix A), the two schoolships (Appendix B) and the fourteen inactive TAP class ships in the NDRF (Appendix E). There are no other choices as is seen from Figure 3.

None of these eighteen ships is completely suitable for trooplift at present. This section will look at the basic adequacy of the ships; troop care, mechanical, and safety. The following section will discuss capability improvement issues.

The two cruise ships could be almost immediately used by installing simple portable bunk modules, provisioning and getting underway.[4] An extensive shipyard period would not be required. This offers a capability to deploy forces from Hawaii to locations in the Pacific, but is of little immediate value in the European, African, or Middle Eastern areas. In order to have these two ships capable of deploying with the stated 4,300 troops each, initial engineering, procurement of habitability and safety items, and planning must be completed. The one-time cost would be about $4.4 million per ship.

The two schoolships would require modification in a shipyard before they could be employed.[5,6] Although both ships are currently certified by the U.S. Coast Guard, the mechanical and propulsion systems would require work,

SEQUENCE OF SHIP AVAILABILITY

(Excluding Seizure)

Sequence	1	2	3	4	5	6	7	8
Source of Ships	MSC FLEET	CHARTER	RRF	SRP	REQUISITION	NDRF	EUSC	FOREIGN
Number of Ships	o	2	0	0	2	14	0	0
Authority Required to Activate	MSC	MSC	MSC & MARAD	CNO/SEC NAV/SEC DEF	PRESI-DENT	PRESI-DENT	PRESI-DENT	NATO
Notes		Passen-ger Liners Appendix A		3 Stages	School Ships Appendix B	TAP'S Appendix E	Availabi-lity Unlikely (3 ships)	Unavilable 37+NATO Only-If made Available

Figure 3

plus considerable rehabilitation of the troop spaces is needed. The cost of yard work would be about $10.3 million for each ship. Full crews are not on board except during the annual two-month training cruises. An additional problem is that these cruises take the ships outside the waters of the United States. Nevertheless, these ships could become available, if shipyard space is available in a reasonably short period of time, or the engineering could be performed now and the ships could then be held at an advanced state of readiness. Again, there is a geographic limitation. These ships would be available for use in the Atlantic Ocean and could assist in the middle-east, but they are not located near major ground force units and would require time to arrive in a port for loading.

The 14 TAPs in the NDRF, are in poor condition and would require extensive (8-12 months) overhaul in a shipyard before embarking troops.[6] The cost for this work ranges from $22 million per ship for the Admiral Class, to $24 million per ship for the General Class. A cost of about $10 to $12 million per ship would be possible if all environmental (sewage, etc) and health (asbestos, etc.) considerations were ignored. There are no crews assigned. Six TAPs are located in the James River (Virginia), near suitable shipyards, and six are located at Susian Bay (California), again in close proximity to shipyards. Two TAPs are currently in use as unpowered billeting ships. If refurbished and crewed, these 14 vessels would be ideally located to support major deployments to any theater.

The crucial problems which determine availability are initial one-time investments, shipyard availability, and crew availability. The present

imbalance of geographic positioning could be resolved as a direct result of the availability decisions. All of these issues focus upon providing no more than a ship which can transport troops. Additional military features and capabilities will be discussed in the next section of this chapter. Lesser problems involving planning by the CINCs will be discussed later in this section.

One time costs, other than overhauls, consist primarily of fabricating modular bunks for the passenger ships and acquiring the necessary safety and habitability equipment to outfit the number of ships to be used. Since these items may have a considerable lead time in becoming available, an early decision as to quantity and issuing of procurement contracts is important.

Shipyard availability may be the key restriction on availability, particularly during mobilization. Capacity of the yard is of major concern.[7] One measure which would lessen the shipyard limitation would be to upgrade some or all of the ships prior to mobilization. This would be costly, but would significantly improve response time. This would also permit the use of smaller yards to do the final work if the major upgrades had already been accomplished. Developing the engineering drawings and having draft contracts prepared would facilitate scheduling and improve response time. Development of a priority system for all shipyard use during mobilization would also help to insure that troopships were delivered when required.

Crew is not at present a major problem, with one exception. Generally, there are about 2.8 crews available for each active U.S. ship; however, these crews are aging. Crew availability is expected to decline to under 1.5 crews

per ship by the early 1990's.[8] There is a shortage of engine room personnel certified for turbo-electric propulsion systems such as those used by the General Class TAPs. Because it takes in excess of two years to train and certify engineers on this type of system, the shortage may delay or preclude the use of seven of the TAPs.

Increasing the number of active ships is impractical both from a personnel and from a cost standpoint. The inactive ships would be manned by civilian crews when employed, therefore, returning them to active naval status would be a use other than intended for combat and would draw resources from the naval combat forces. The increased readiness resulting from activation could be almost equalled by upgrading the condition of the ships. Activation with civilian crews or a retainer program, is also undesirable. There is no obvious demand for troopships in peacetime, therefore, they would sit idle. Additionally, a study of cargo ships demonstrated that a retainer program was not generally desirable.[9]

The final measure that would provide more ships sooner would be to upgrade some or all of the troopships in the NDRF. By upgrading and placing ships in the Ready Reserve Fleet (RRF) an availability of less than 10 days would be possible.[10] While this incurs a large initial cost and substantially increases annual maintenance costs it could solve the availability, response time, and geographic location problems.

The lesser problems mentioned earlier are essentially employment problems. A key element in rapidly loading a unit and its equipment is an embarkation plan based on the ship's loading and characteristics pamphlet

(SLCP). Each CINC could develop SLCPs for the types of ships most likely to be assigned. This could be initiated immediately. A monitoring program of ship status, condition, location and tentative allocation would significantly assist the CINCs in developing plans which include seaborne trooplift.

None of these programs provide more than the potential 18 ships. At best they improve the response time and insure that at least some capability is available. This capability is little more than transportation without significant military features. The next section will describe enhancements.

Improving Capabilities

None of the 18 ships being discussed is configured for operation as a naval auxiliary, nor does it have features that contribute to amphibious operations or expeditionary offloading.

Of critical importance is communications. None of these ships is capable of operating with a naval convoy without significant improvements. A single van that contains the necessary devices and which can be deck mounted is being developed. The cost is estimated at $785,000 per van. This amount was included in the costs discussed in the preceding section.

Off-loading, either in an austere port, off a beach, or as part of an amphibious operation is highly desirable. There is no need, nor could these ships provide literage; however, landing craft would be available from the amphibious ships. Cargo nets and a means of rigging them to off load the troops are mandatory. Additionally, a helicopter platform would be a major enhancement. Such platforms were added to British ships for deployment to the

Falklands. There is a considerable cost, but the ability to resupply, move troops, conduct medical evacuations, etc., is important. As a minimum, the engineering studies and cost estimates should be completed for each class of ship to provide helicopter platforms and cargo net anchors. Finally, booms for cargo handling are needed. The three troopship classes have suitable booms, but cargo handling equipment should be examined for the two passenger ships.

Other defense features[11] such as passive air defense, anti-boat/swimmer weapons, and underway replenishment should be added. There is no need to arm these ships as was the practice in World War II. Crude gun mounts would not be effective against modern weapons. Even basic missile systems could not be efficiently manned on troopships nor would such systems be essential since these ships would be escorted. Refueling at sea is vital, particularly for the General Class TAPs. Appendix E shows that their range is only 3/4 of the Admiral Class.

Costs

Costs were mentioned earlier; however, they were cost per ship and bore little relationship to the trooplift provided. This section describes both the upgrade costs and the annual maintenance costs. These costs are independent of crewing, provisioning and operating costs. None of these are a peacetime factor since the two passenger ships and the two schoolships will continue to function in their present role and none of these actual operating costs are applicable to ships in the RRF or the NDRF. Base line maintenance

costs for the school ships are $2 million per year per ship. MARAD provides $1.5 million of this cost for each ship. Maintenance for each troopship in the NDRF costs about $25,000 per year and is paid by MARAD. RRF maintenance would be about $300,000 per ship per year. All upgrade costs would be paid by the Navy.

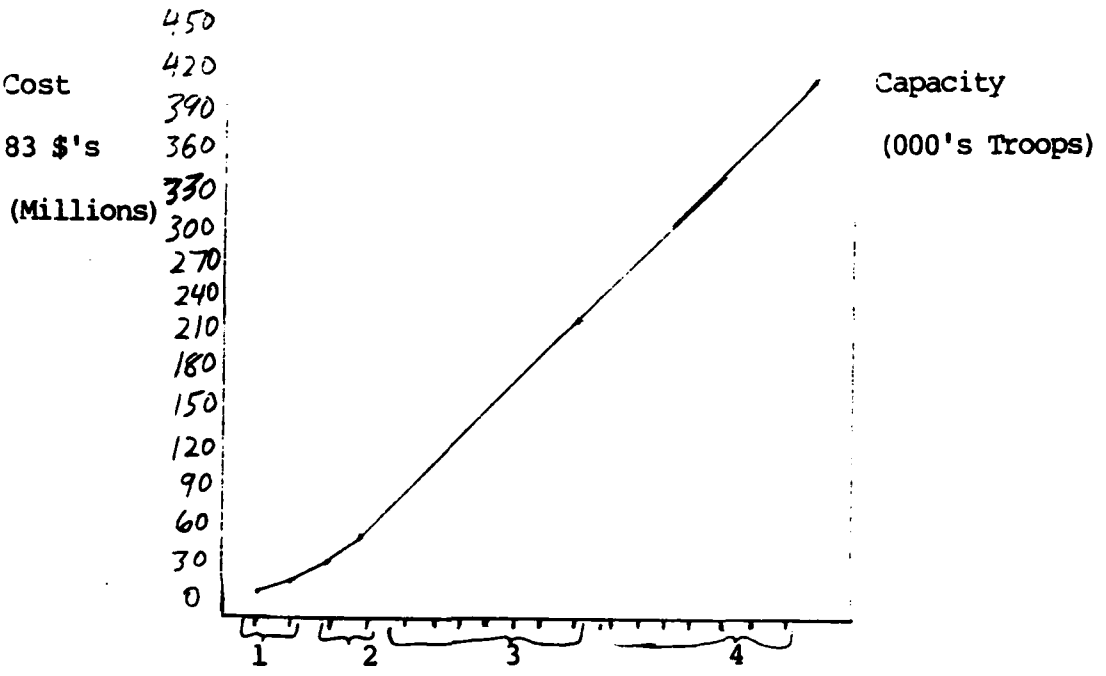
Figure 4 shows the total upgrade cost in relation to trooplift capacity. An upgrade sequence of passenger ships, schoolships, General Class TAP, Admiral Class TAP was used. This creates a midperiod geographical imbalance on the West Coast, but recognizes the problem of crewing the Admiral Class through the mid-1990's. Figure 5 preserves a geographic balance through the middle portion of activation. An alternative would be to reposition/swap ships between the James River Fleet and the Susian Bay Fleet

Figure 6 depicts the corresponding increase in annual maintenance costs.

This study does not attempt to select a best number of ships or an affordable cost. The number of ships should be derived from the requirement to support the CINCs. This may be increased or decreased by budgetary constraints/availability, a decision to support shipyards for mobilization, a new requirement, ships converting to U.S. flag or other possible reasons. The importance of the cost/trooplift tables is to assist planners in stating resource requirements to support plans.

TOTAL UPGRADE COSTS

(Simple Solution)



1 Passenger Ships

2 School Ships

3 General Class TAP

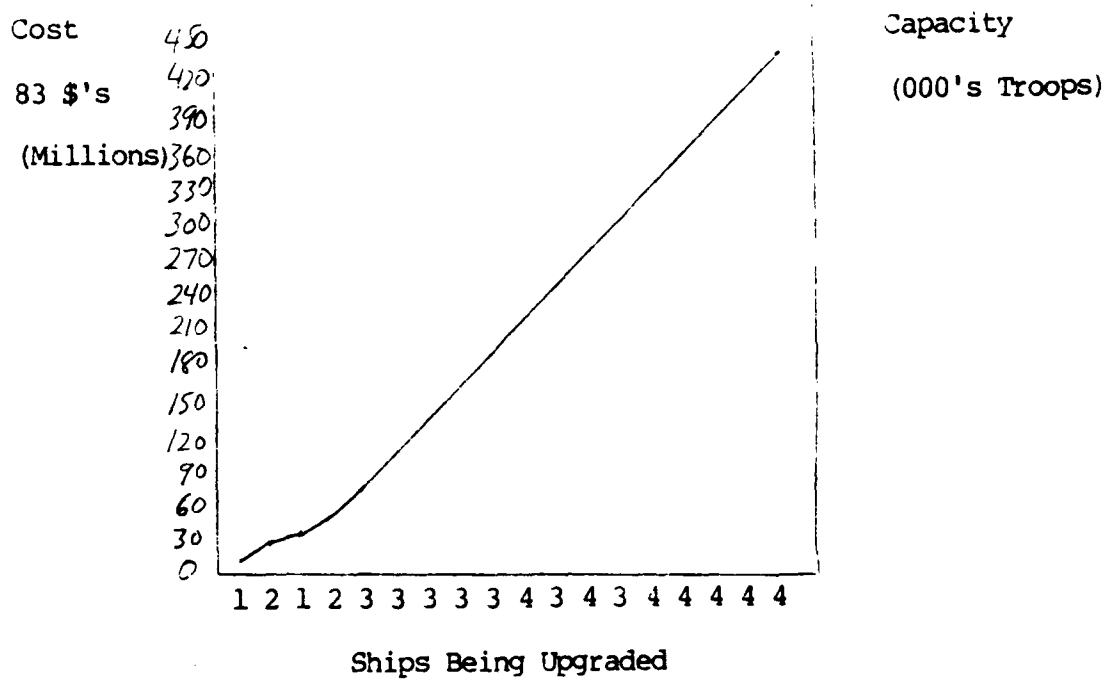
4 Admiral Class TAP

Total Cost $376.1 Million

Figure 4

TOTAL UPGRADE COSTS

(Geographic Balance Solution)



1 Passenger Ships

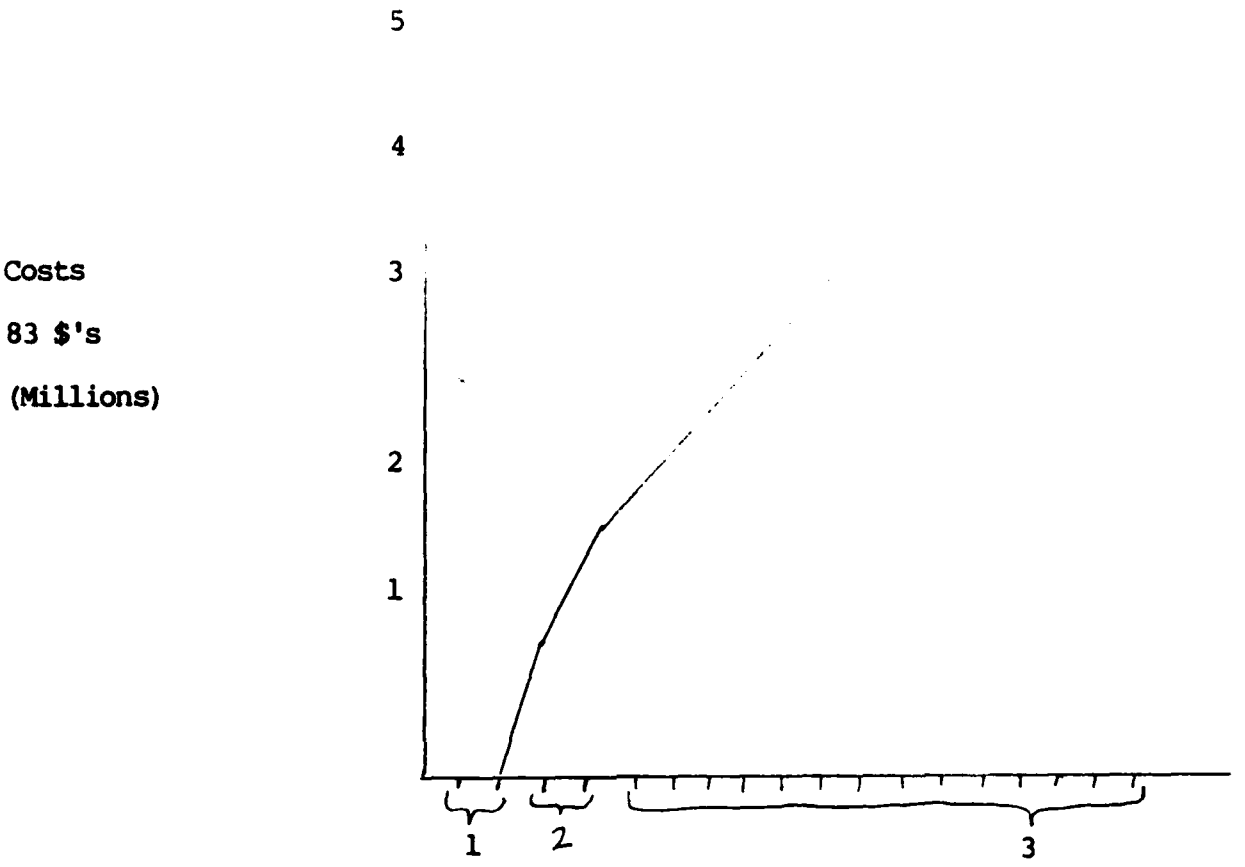
2 School Ships

3 General Class TAP

4 Admiral Class TAP

Figure 5

INCREASES IN ANNUAL MAINTENANCE COSTS



1 Passenger Ships - Paid by owner

2 School Ships - Currently $2.0M ($1.5M - MARAD, $.5M), will require an additional $.75M.

3 TAPs (Both Classes) - Currently $25,000/ship in the NDRF, will be $300,000/ship in RRF.

Figure 6

FOOTNOTES

CHAPTER IV (Pages 25 - 38)

[1]Interview with Captain John S. Ekstrom (USM), Director, Strategic Mobility Operations Division, J-4, Joint Chiefs of Staff (Washington: 25 January 1983).

[2]Interview with Commander W. P. Thomas (USN), Military Sealift Command (Washington: 20 October 1982).

[3]Interview with Captain C. Preston (USN), OP404, Office of the Chief of Naval Operations (Washington: 9 February 1983).

[4]Interview with Commander W. P. Thomas (USN), Military Sealift Command (Washington: 20 October 1982).

[5]Interview with Paul A. Fries, Jr., Manager, Support and Mobility, Information Spectrum, Inc. (Arlington, Virginia: 18 February 1983).

[6]Ibid.

[7]National Security and Industrial Association and National Defense Transportation Association, Record of Proceedings of the Conference on National Strategic Mobility-May 1982, p. 88.

[8]Interview with Paul A. Fries, Jr., Manager, Support and Mobility, Information Spectrum, Inc. (Arlington, Virginia: 18 February 1983).

[9]Center for Naval Analysis, The Cost of Merchant Ship Availability, CNA 347-73 (Arlington, Virginia: 1973), p. vii.

[10]Marshall E. Daniel, LTC (USAF), Defense Transportation Organization-Strategic Mobility in Changing Times, p. 26.

[11]Interview with Paul A. Fries, Jr., Manager, Support and Mobility, Information Spectrum, Inc. (Arlington, Virginia: 18 February 1983).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The pattern of the Spanish-American War, World War I, and World War II has been continued. The insufficient trooplift capacity of the Navy was corrected by reliance upon the merchant marine industry and the ability of numerous shipyards to quickly build troopships. Following each war, an immediate reduction in the number of troopships occurred, ultimately culminating in an inability to respond to a major crisis. This is the present status of the U.S. Navy, for there are no active or reserve troopships. The only seaborne trooplift is contained in the small and inadequate amphibious fleet which must be reserved for and dedicated to amphibious landings.

In previous periods of Navy troopship decline, the private sector could provide assistance with a number of large modern passenger liners. This is no longer possible for the passenger ship fleet has all but been destroyed by the emergence of the airline industry. Two ships do not provide a significant capability.

The ability to rapidly produce additional ships, or to reactivate vessels which were laid up, cannot be relied upon to fill the seaborne trooplift shortage. The number of yards have diminished and the base for rapid expansion does not exist. The decline in the steel industry and the loss of many second and third tier manufacturers further exacerbates the inability to quickly increase the availability of troopships after mobilization.

The essentially completed reliance upon airlift to move troops has been the major reasons that troopship availability has not been addressed as a major problem. The recent recognition that there may be a shortfall in the capacity to airlift all the required troops has led to a review of the requirement for troopships. Additonal airlift limiting factors including buildup rates, airfield limitations, and unit integrity have spurred the concern over the lack of a second leg for strategic trooplift. The Falkland Islands War graphically demonstrated that there are situations in which the airlifting of troops would be impossible. Finally, the need for ships that could transport personnel to support collateral missions has been recognized.

There is no likelihood of a significant revitalization of the passenger shipping segment within the next ten years. Budgetary constraints and the need to modernize weapons systems, increase stocks of munitions and parts, and to upgrade training and material readiness make it extremely unlikely that any new troopship or troop capable ships will be produced in the next ten years. Hence, the United States must rely solely upon existing assets.

Planning is necessarily based upon capabilities, therefore, the circular argument, requirement-to plan-to requirement, must be broken. Planners must be allocated specific resources and these troopship resources must be improved in both availability and capability. The cost of reestablishing the ability to deploy a militarily significant number of troops by sea is not great. The time required to complete this task would be several years, but since the ability to rapidly mobilize is not presently an option, it is essential to begin now.

Recommendations

Various measures which would be needed for the United States to restore the troopship option of deploying troops have been discussed in the preceding chapters. In this final section the specific recommendations which would contribute to achieving that goal are stated. These recommendations are presented in a sequence which leads to a rapid and efficient establishment of an American troopship capability that would remain effective through the mid-1990's.

1. Break the circular arugment of plans and requirements by tasking planners to reexamine all present plans with the consideration of unconstrained troopship availability. This will permit the identification of actual troopship requirements and response times.

2. State specific requirements in the Defense Guidance. Unless a tasking is made, there will be no funds and no program to provide additional trooplift.

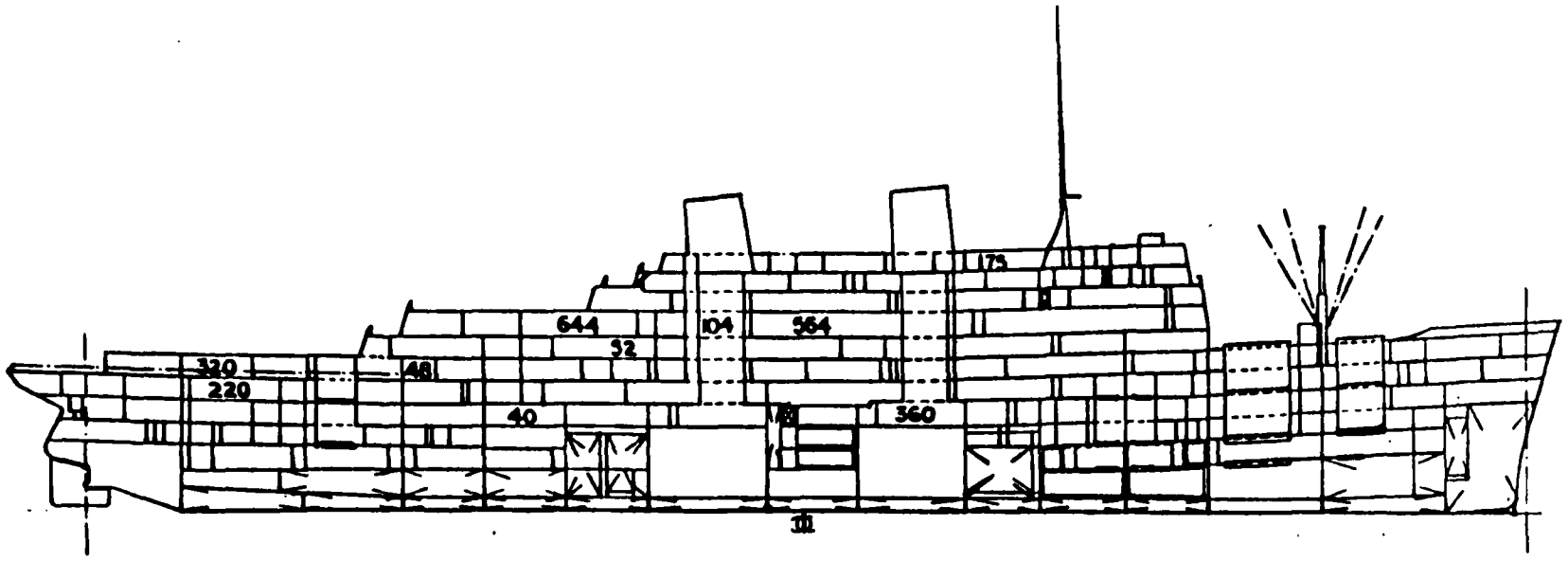
3. Immediately initiate low cost programs. Ships Loading and Characteristic Pamphlets (SLCP's) could be developed by CINCLANT and CINCPAC for the ships which would be available within their respective areas. Develop basic engineering plans, identify shipyards which will conduct overhauls, and continue the development of communication and defense feature modules. Prioritize the schedule for ship upgrades/overhauls.

4. Based upon the requirements derived from recommendation one, fund and begin the upgrading of troopship availability and capabilities.

5. Place the specified ships into the RRF upon completion of the shipyard period.

6. Include the periodic use of these upgraded RRF troopships in exercises in order to test mobilization plans and ship readiness.

By following these recommendations, America will be able to reestablish a reliable, responsive American troopship capability. Strategic troop mobility will in fact have two legs, improve flexibility and the capacity to undertake tasks that airlift is either unable to, or is unavailable to accomplish. The United States will substantially enhance its ability to project its military power, either through employment or through presence. For some future contingency it will be possible to state: ". . .by air and/or by sea. . . .," for there will be an American troopship capability.



2 LINERS: "INDEPENDENCE" CLASS

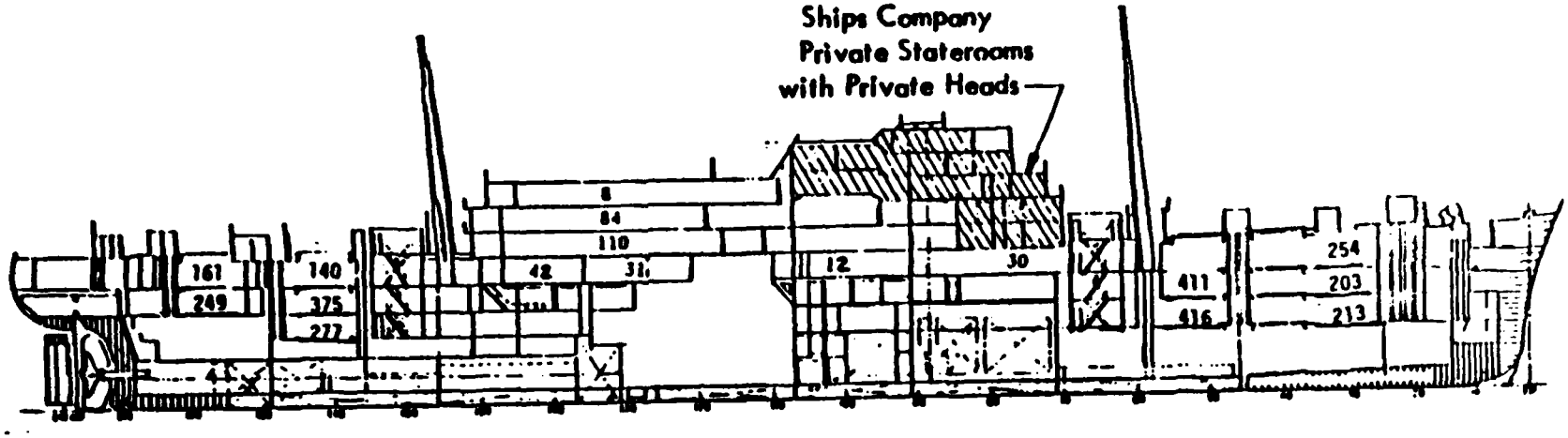
(U)	NUMBER	NAME	LAUNCHED	IN SERVICE	STATUS	LOCATION
	MA 2912	INDEPENDENCE	1950	1951	ACTIVE	HAWAII
	MA 2913	CONSTITUTION	1951	1952	ACTIVE	HAWAII

Builders:	Bethlehem Steel Co., Quincy, MA
Displacement:	29,521 Tons Standard 30,090 Tons Full Load
Length:	682 5/12 Feet (208.0m) oa
Beam:	89 Feet (27.1m)
Draft:	30 2/12 Feet
Propulsion:	2 Steam Turbines; 27,500 shp 2 Shafts
Boilers:	4
Speed:	24 Knots (Maximum); 19 (Service)
Helicopters:	No Facilities
Guns:	None

(U) TROOP BERTHING SUMMARY

1. 1,576 BERTHS IN STATEROOMS
2. 2,803 BERTHS IN LARGE AREAS
   4,379

TOTAL 4,379 BERTHS W/O MODIFICATION



3 SCHOOLSHIPS: "BARRETT" CLASS (U)

(U)	NUMBER	NAME	LAUNCHED	IN SERVICE	STATUS	LOCATION
	T-AP 196	BARRETT	27 JUN 1950	15 DEC 1951	LOAN	EC
	T-AP 197	GEIGER	9 OCT 1950	13 SEP 1952	LOAN	EC
	T-AP 198	UPSHUR	19 JAN 1951	20 DEC 1952	LOAN	EC

Builders:	New York Shipbuilding Corp., Camden, N.J.
Displacement:	17,600 Tons Standard 19,600 Tons Full Load
Length:	533 Feet (162.7 m) oa
Beam:	73 Feet (22.25 m)
Draft:	27 Feet (8.2 m)
Propulsion:	Steam Turbines; 13,750 shp; 1 Shaft
Boilers:	2
Speed:	19 Knots
Helicopters:	No Facilities
Guns:	None

(U)	TROOP BERTHING SUMMARY
	1. 317 Berths in Staterooms
	2. 2699 Berths in Large Areas
	3016
	Total 3016 Berths w/o Modification

APPENDIX C

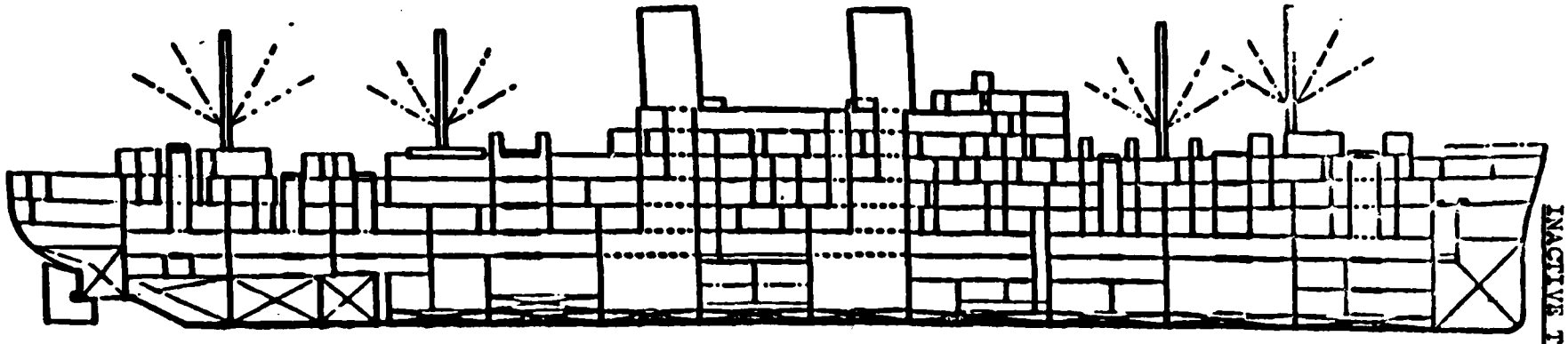
EFFECTIVE U.S. CONTROL (EUSC) PASSENGER SHIPS

Name	No. of Passengers	Notional Maximum Troop Capacity*
Rotterdam	1,114	4,200
Volendam	715	3,100
Veendam	713	3,100

APPENDIX D

INACTIVE U.S. FLAG PASSENGER SHIPS

Name	Notional Troop Capacity
United States	5,000
Mariposa	1,700
Monterey	1,700



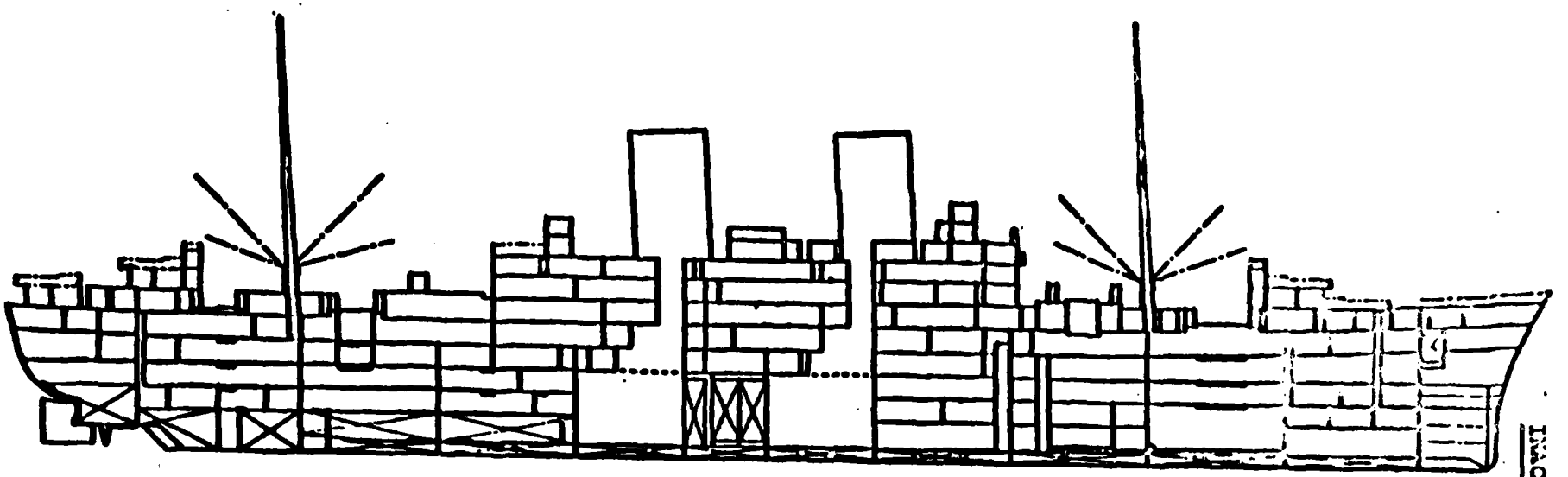
7 TROOPSHIPS: "ADMIRAL" CLASS (P2E)(U)

(U) NUMBER	NAME	LAUNCHED	COMMISSIONED	STATUS
T-AP 120	GEN. DANIEL I. SULTAN	28 NOV 1943	23 AUG 1944	[illegible]
T-AP 122	GEN. ALEXANDER M. PATCH	22 APR 1944	21 NOV 1944	[illegible]
T-AP 123	GEN. SIMON B. BUCKNER	14 JUN 1944	24 JAN 1945	[illegible]
T-AP 124	GEN. EDWIN D. PATRICK	27 JUL 1944	31 JAN 1945	[illegible]
T-AP 125	GEN. NELSON M. WALKER	26 NOV 1944	24 APR 1945	[illegible]
T-AP 126	GEN. MAURICE ROSE	25 FEB 1945	10 JUL 1945	[illegible]
T-AP 127	GEN. WILLIAM O. DARBY	4 JUN 1945	27 SEP 1945	[illegible] *

Builders:	Bethlehem Steel Co., Alameda, CA
Displacement:	9,676 Tons Standard 29,120 Tons Full Load
Length:	608 11/12 Feet (185.6 m) oa
Beam:	75½ Feet (23.0 m)
Draft:	29 Feet (8.8 m)
Propulsion:	Turbo-electric (General Electric Turbines; 18,000 shp 2 Shafts
Boilers:	4 (Combustion Engineering)
Speed:	19 Knots
Helicopters:	No facilities
Guns:	Removed

(U) TROOP BERTHING SUMMARY		LOCATION	
GEN. EDWIN D. PATRICK	3,129	WC	
GEN. DANIEL I. SULTAN	3,119	WC	
GEN. NELSON M. WALKER	3,116	EC	
GEN. MAURICE ROSE	3,062	EC	
GEN. ALEXANDER M. PATCH	3,062	EC	
GEN. SIMON B. BUCKNER	3,007	EC	
GEN. WILLIAM O. DARBY	3,000	EC	*

* Temporarily in use as a billeting ship, Norfolk, Va.



7 TROOPSHIPS: "GENERAL" CLASS (P2) (U)

(U) NUMBER	NAME	LAUNCHED	COMMISSIONED	STATUS	
T-AP 110	GEN. JOHN POPE	21 MAR 1943	5 AUG 1943	NR	
T-AP 111	GEN. A. E. ANDERSON	2 MAY 1943	5 OCT 1943	NR	**
T-AP 112	GEN. W. A. MANN	18 JUL 1943	13 OCT 1943	NR	
T-AP 114	GEN. WILLIAM MITCHELL	31 OCT 1943	19 JAN 1944	NR	
T-AP 117	GEN. W. H. GORDON	7 MAY 1944	29 JUN 1944	NR	
T-AP 119	GEN. WILLIAM WEIGEL	3 SEP 1944	6 JAN 1945	NR	*
T-AP 176	GEN. J. C. BRECKINRIDGE	18 MAR 1945	30 JUN 1945	NR	

Builders:	Federal Shipbuilding and DD Co., Kearny, N.J.
Displacement:	11,828 Tons Standard 20,175 Tons Full Load
Length:	622 7/12 Feet (189.8 m) oa
Beam:	75½ Feet (23.0 m)
Draft:	25½ Feet (7.8 m)
Propulsion:	Steam Turbines (De Laval); 17,000 shp; 2 Shafts
Boilers:	4 (Foster Wheeler)
Speed:	20.6 Knots
Helicopters:	No facilities
Guns:	Removed

(U) TROOP BERTHING SUMMARY

	LOCATION	
GEN. W. H. GORDON	4,847	EC
GEN. WILLIAM WEIGEL	4,620	MC *
GEN. A. E. ANDERSON	4,255	MC **
GEN. JOHN POPE	4,187	MC
GEN. WILLIAM MITCHELL	3,866	MC
GEN. J. C. BRECKINRIDGE	3,642	MC
GEN. W. A. MANN	3,468	EC

* Temporarily is use as a billeting ship, Bremerton, Wa.

** No maintenance performed since 1974.

NDRF TROOPSHIPS

Additional Characteristics[1]

Name	CARGO CAPACITY (LONG TONS)	RANGE (000 MILES)	LOCATION[2]
GENERAL CLASS			
MANN	109	8	JR
GORDAN	59	11	JR
ANDERSON	109	8	SB
BRECKENRIDGE	109	8	SB
POPE	69	11	SB
MITCHELL	109	8	SB
WEIGEL[3]	72	11	SB
ADMIRAL CLASS			
PATCH	94	15	JR
ROSE	96	15	JR
WALKER	83	15	JR
BUCKNER	94	15	JR
DARBY[3]	96	15	JR
SULTAN	102	15	SB
PATRICK	102	15	SB

Total Capacity	Troops (Pages 1&2)	Cargo Long Tons (This page)
General Class	28,885	636
Admiral Class	21,495	667
	50,380	1,303

[1]Military Sealift Command, Ship Register-July 1982, MSC P504, pp. 39 & 50.

[2]Abbreviations Are: JR - James River, Virginia
SB - Susian Bay, California

[3]Currently in use as billeting ships. Habitability has been upgraded.

Appendix E

APPENDIX F

LARGE FOREIGN FLAG PASSENGER SHIPS CALLING AT U.S. PORTS

Name	No. of Passengers	Notional Maximum Capacity*
Norway	1,864	9,000
Queen Elizabeth II	1,800	8,600
Song of America	1,414	5,500
Festivale	1,400	5,500
Tropicale	1,400	5,500
Carnivale	1,350	5,300
Mardi Gras	1,240	4,800
Atlantic	1,067	4,400
Song of Norway	1,040	4,400
Nordic Prince	1,038	4,400
Oceanic	1,034	4,400
Fairsea	925	4,000
Fairwind	925	4,000
Rhapsody	850	3,600
Azure Seas	824	3,500
Skyward	790	3,400
Staward	788	3,400
Wouthward	764	3,200
Cunard Countess	750	3,200
Cunard Princess	750	3,200
Carla C	748	3,200
Sun Viking	728	3,100
Royal Viking Sky	725	3,100
Royal Viking Star	725	3,100
Sunward	696	3,000
Sun Princess	686	3,000
Vista Fjord	635	2,700
Stella Solaris	630	2,700
Island Princess	626	2,700
Pacific Princess	626	2,700
Amerikanis	614	2,700
Dolphin	565	2,300
Azul	550	2,300
Mermoz	550	2,300
Sagafjord	507	2,000
Boheme	500	2,000
Royal Viking Sea	500	2,000

*Based on estimates of capacity with limited alterations.

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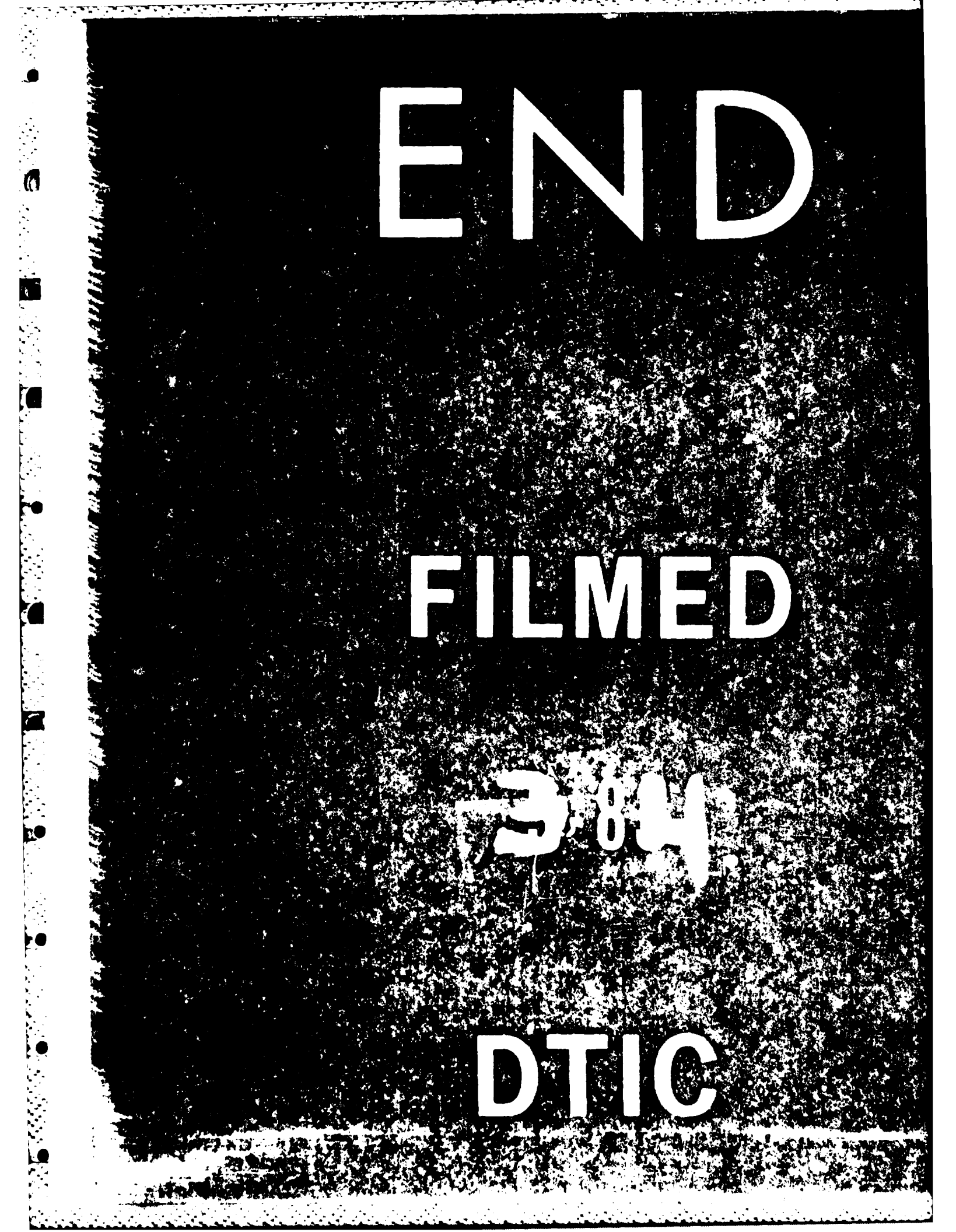
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